

IX.2.1 FORECAST SYSTEM GENERAL INFORMATION

This section describes information about the Operational Forecast System.

Subroutine and Common Block Naming Conventions

Subroutine and common block names begin with a character that indicates the component or Function to which the software belongs.

In some cases additional characters are also used to describe a particular part of the component or Function.

The following is a list of the characters used to name routines:

<u>Character</u>	<u>Description</u>
AG	AFOS Graphics
B	Unused
C	Calibration System
D	Data Entry Component
DG	GOES
DS	SASM
DT	Forecast temperature
E	Extended Streamflow Prediction Component
F	Forecast Component
G	Program FCST Function MARO
H	Hydrologic Command Language
I	Integer function
J	Unused
K	Unused
L	Unused
M	Program FCST MODs
N	Program FCST Function MAPX
O	Parameter Optimization Component
P	General Preprocessor Component including non read/write routines in the Preprocessor, Preprocessor Parametric and Processed Data Bases
Q	Program FCST Function RRS
R	Read from data file
RPD	Read from Preprocessor Data Base
RPP	Read from Processed Parametric Data Base
RPR	Read from Processed Data Base
S	Program PPINIT
SB	Program PPINIT command DEBUG and basin definition routines
SC	Program PPINIT punch parameter array
SF	Program PPINIT command DEFINE
SG	Program PPINIT command CHANGE
SL	Program PPINIT command DELETE
SM	Program PPINIT command DUMP
SN	Program PPINIT command NETWORK
SO	Program PPINIT command ORDER

<u>Character</u>	<u>Description</u>
SP	Program PPINIT print parameter array
SR	Program PPINIT read parameter array
SS	Program PPINIT command STATUS
SU	Program PPINIT utility
SW	Program PPINIT write parameter array
T	Program FCST Function MAT
U	Utility Routine
UR	REORDER Program
UX	FILECRAT Program
UZ	FILESIZE Program
V	Program FCST Function MAPE
W	Write to data file
WPD	Write to Preprocessor Data Base
WPP	Write to Preprocessor Parametric Data Base
WPR	Write to Processed Data Base
X	Program FCST Function MAP
XF	Program FCST Function FMAP
Y	Unused
Z	Unused

The following are exceptions to the above conventions.

Subroutines and common blocks cannot:

1. o end with a number in the range 10 to 999
2. be named:
 - o COXn
 - o EXn
 - o PRCn
 - o PRPn
 where n is a number from 1 to 999
3. be named:
 - o ERROR
 - o WARN
 - o KILL
 - o STOP
 - o IFBUG
 - o MDYH1
 - o MDYH2
 - o JULDA1
 - o JULDA2
 - o FCTZC
 - o FCITZC
 - o WHERE
 - o TOTERZ
 - o KILLCD
 - o PGM
 - o SYSBUG
 - o TIMING
 - o IONUM
 - o LOCATE

- o HEADER
- o RDFILE
- o WTFILE

Exception 1 is necessary because lower level routines belonging to Forecast Component operations with numbers above 9 are assigned a name where the last characters are the operation number. The names are of the general form

subnnn

where sub

is one to three or four characters (not necessarily beginning with an 'F')

nnn is a number from 10 to 999

Exception 2 is necessary because the specified names are standard names for high level Forecast Component operation subroutines.

Input/Output Units

Table 1 lists the unit number used by the Operational Forecast System. Units assigned for use by a component can be used for permanent or temporary data sets.

Variables are used to define the unit numbers in READ or WRITE statements. For example, the statement:

```
READ (11,x) DATA
```

would be replaced by a statement similar to:

```
READ (LU11,x) DATA
```

where LU11 has been assigned a value in a common block

The common block would consist of variable names for each unit number. The value assigned to the variables would be set in a BLOCK DATA routine. The coding used to accomplish the READ in the previous example would be similar to:

```
COMMON /UNITS/ LU5,LU6,LU7,LU9,LU11
```

```

.
.

```

```
READ (LU11,x) DATA
```

I/O such as line printer and card punch should be done directly through READ or WRITE statement. I/O should never done directly to a data file except in routines written to do I/O to a specific unit. Data files should always be accessed by calling a subroutine that performs the I/O operations. I/O statements, such as the one in the previous example, should only appear in the read/write subroutines. The coding used to accomplish the READ in the previous example would be similar to:

```
CALL READLU (KU11,DATA)
```

This method of accessing data files isolates the I/O statements to only those routines written to do I/O and makes modification of data files much easier to implement.

Whenever I/O to a data file has been completed, the unit should be closed. This is important because it releases any buffer space assigned by the computer, releasing that memory space for other use. A unit is always closed by calling a routine written to close a specific unit. The coding the user would use to close the unit accessed in the previous example is similar to:

```
CALL CLOSLU (KU11)
```

Table 1. Operational Forecast System I/O units

<u>Unit Range</u>	<u>Units</u>	<u>Description</u>
1-4		System Files
	1	Printer output
	2	General purpose temporary file for use by single Function
	3	Data Type/data unit/RRS type
	4	User parameters
5-9		User input/output data
	5	Card reader
	6	Printer output
	7	Card output
	8	Printer output
	9	Printer output (error messages)
10-11		Hydrologic Command Language - Global
	10	Global index
	11	Global definitions
12-14		Hydrologic Command Language - Local
	12	Local index
	13	Local definitions
	14	Local defaults
15-20		GOES Data Entry files
	15	GOES Control file
	16-20	Not used
21-36		Calibration System Data Files
37-43		ESP Historical Data Files
40-45		Preprocessor Parametric Data Base
	40	Index
	41-45	Parameters
46-47		Synoptic Data Entry files
	46	Synoptic Control File
	47	Not used
48-49		HCL temporary <u>1</u> /
	48	Command cards
	49	Runtime options
50-51		Processed Data Base
	50	Not used
	51	User parameters
	52	Index
	53-57	Time series data
	58-59	Not used
60-69		Forecast Component Parametric Data Base

<u>Unit Range</u>	<u>Units</u>	<u>Description</u>
	60	Carryover Group definitions
	61	Carryover data
	62	Forecast Group status
	63	Forecast Group Segment identifiers
	64	Not used
	65	Segment pointer data
	66	Segment status data
	67	Segment parameter data
	68	Rating Curve definitions
	69	Rating Curve pointer data
70-79		Forecast and Preprocessor Component temporary files <u>1</u> /
80-87		Preprocessor Observed Data Base
	80	Index
	81	RRS data
	82-85	Daily data
	86-87	Not used
88-89		HCL temporary <u>1</u> /
	88	Function defaults
	89	Expanded procedures
90-99		Extended Streamflow Prediction Data Base
	90	Temporary file <u>1</u> /
	91-95	Not used
	96	User parameters
	97	ESP printer output
	98-99	Not used

Note:

1/ Temporary file that exists only while a program is being executed.